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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/890,649 | 10/26/2001 | Michael W. Dahm | 24741-1529 | 5173 |
| 7590 | 11/20/2006 | | | |
| Patricia D. Granados Heller Ehrman White & McAuliffe 1717 Rhode Island Avenue, N.W. Washington, DC 20036-3001 | | | | EXAMINER CANELLA, KAREN A |
| | | | | ART UNIT 1643 PAPER NUMBER |

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/890,649 | DHAM ET AL | |
| | Examiner | Art Unit | |
| | Karen A. Canella | 1643 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 36-48, 51-65, 67, 69-75 and 77-85 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 36-48 and 51-65, 67, 69-75, 77-85 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claims 36, 64, 70 and 77 have been amended. Claims 66, 68, 76, 86 and 87 have been canceled. Claims 36-48 and 51-65, 67, 69-75, 77-85 are pending and under consideration.

Sections of title 35, U.S. Code not found in this action can be found in a prior action.

Claim 69 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how claim 69 further limits claim 64 because the range of claim 64 does not include 1.062 g/ml. It is noted that the disclosure of Mond et al is traversed by applicant with the argument that 1.062 is outside of the claimed range of densities.

The rejection of claims 36-48, 51-63, 71-75 and 77-85 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a centrifugation vessel comprising a porous barrier, filter sieve or the flap as described in Figure 3 of the instant invention, does not reasonably provide enablement for a centrifuge vessel comprising any other type of "flap". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the centrifuge vessel of the invention commensurate in scope with these claims is maintained for reasons of record.

The instant method and product claims are dependent in part or in whole on a centrifugation vessel having a flap by which to divide the vessel into an upper and lower compartment. The specification teaches that the flap is closed in the state when the vessel is at rest and opened by centrifugal force during centrifugation. During the course of centrifugation, cells within the applied body fluid migrate to a specific density within the fluid of the lower compartment. In order to isolate said cells after centrifugation, it is necessary that the gradient established by centrifugal force not be disturbed by a mechanical action of a flap closure as the tube is decelerated. The specification provides a drawing of such a mechanical closure and terms it a "flap". One of skill in the art could not make a centrifugal vessel having a generic "flap" with a different geometry from that portrayed in figure 3, because to do so would cause a

mechanical interference with the gradient formed by the centrifugation. In case of the disclosed "flap" the movement of the closure would be parallel to the plane of the band having the concentrated cells, and would not disrupt the cells. Given the teachings of the specification, one of skill in the art would be subject to undue experimentation in order to make a centrifugation vessel with the broadly claimed "flap" which would function in the methods as claimed. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197(Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). when the claims cover every conceivable structure for achieving the stated property of having a centrifugation vessel with a "flap", while the specification discloses at most only those known to the inventor, a fact situation comparable to *Hyatt* is possible. (MPEP 2164.08(a)).

Amendment of the claims to specify that the flap is a disk which is a disk , wherein said disk is bent by centrifugation on two sides across a transverse strut (page 28, lines 24-26). is suggested.

The rejection of Claims 64, 65, 67 under 35 U.S.C. 102(b) as being anticipated by Suda et al (U.S. 4,391,802) is maintained for reasons of record below.

Claim 64 is drawn to a kit for the separation of tumor cells from a body fluid, comprising a cell separation medium which has a density in the range of 1.059 to 1.061 g/ml. Claim 65 embodies the kit of claim 64 further comprising a centrifugation vessel. Claim 67 embodies the kit of claim 64 wherein the medium has a density of about 1.060 g/ml.

Suda et al disclose a cell separation medium and centrifugation vessel, wherein said medium has a density of 1.059, (column 3, line 7).

Applicant argues that Sudas disclosure of mouse myeloma cells differ from the instant invention of separation of cancer cells from a bodily fluid. This is not persuasive. The rejected claims are drawn to a kit comprising a cell separation medium rather than a method of separating tumor cell from bodily fluid

The rejection of claims 64, 65, 67 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Vlasselaer et al (U.S. 5,474,687).

Van Vlasselaer et al disclose a Percoll cell separation medium having a density of 1.0605, plus or minus 0.00005 g/ml, in the bottom of a cell-trap tube with body fluid in the upper portion of said tube (column 13, lines 32-52).

Applicant again argues that Van Vlasselar et al do not disclosure separation of tumor cells from a body fluid. this is not persuasive because it is not a limitation of the rejected claims

Applicants amendment to the range of claim 64 is insufficient to over comes the rejections above which meet the specific limitation of being within the required range

Claims 36-38 and 51-55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 27, 28, 29, 30, 31, 48 and 49 of U.S. Patent No. 6, 821, 726 in view of Van Vlasselaer et al (U.S. 5,474,687).

An obviousness-type double-patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g. *In reBerg*, 140 F.3d, 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

The instant claims are an obvious variant over the claims of '726 because Van Vlasselaer et al teach that having a barrier between the cell separation medium and blood is an improvement over prior art methods because it increases the recovery of separated cells because the desired cells can be decanted rather than removed by a pipette. Thus, one of skill in the art would reasonably conclude that the instant claims are obvious over the reference claims. One of skill in the art would be motivated to use the instant methods requiring a centrifugation vessel having a porous barrier, filter, sieve or flap, because it would provide a higher yield of the separated tumor cells in view of the teachings of Van Vlasselaer et al.

Applicant argues that because Van Vlasselaer et al use a different centrifugation system that the rejection of claims 7, 28, 29, 30, 31, 48 and 49 of U.S. Patent No. 6, 821, 726 is not obvious. This has been considered but not found persuasive. Van Vlasselaer et al is relied upon for motivation of having a barrier within the centrifuge tube to allow for removal of the upper layer without disturbance of the lower layer.

All other rejections and objections as set forth or maintained in the previous Office action are withdrawn.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen A. Canella whose telephone number is (571)272-0828. The examiner can normally be reached on 10-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on (571)272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karen A. Canella, Ph.D.

11/12/2006



KAREN A. CANELLA, PH.D.
PRIMARY EXAMINER